

WHAT IS CLAIMED IS:

1 1. A vehicular hands-free mobile phone system, the system
2 comprising:

3 a vehicle appliance integrated into the vehicle, the vehicle appliance
4 being operable for enabling a user to talk hands-free on a mobile phone during a
5 phone call between the mobile phone and a telephone of another party when the
6 mobile phone is electronically connected to the vehicle appliance, the vehicle
7 appliance having a universal vehicle adapter base integrated in the interior of the
8 vehicle for access by the user, the adapter base having an adapter sleeve receiving
9 area; and

10 first and second adapter sleeves each being removably received within
11 the adapter sleeve receiving area of the adapter base one at a time, the first adapter
12 sleeve having a first mobile phone receiving area for removably receiving a first
13 mobile phone having a first configuration, the second adapter sleeve having a second
14 mobile phone receiving area different than the first mobile phone receiving area for
15 removably receiving a second mobile phone having a second configuration different
16 than the first configuration;

17 wherein the first adapter sleeve and the adapter base electronically
18 connect the first mobile phone to the vehicle appliance when the first adapter sleeve
19 receives the first mobile phone and the adapter base receives the first adapter sleeve;

20 wherein the second adapter sleeve and the adapter base electronically
21 connect the second mobile phone to the vehicle appliance when the second adapter
22 sleeve receives the second mobile phone and the adapter base receives the second
23 adapter sleeve.

1 2. The system of claim 1 wherein:

2 the vehicle appliance includes a microphone for receiving voice
3 communications of the user during a phone call between one of the first and second
4 mobile phones and a telephone of another party when the one of the first and second
5 mobile phones is electronically connected to the vehicle appliance, wherein the
6 vehicle appliance electronically communicates the received voice communications

7 to the one of the first and second mobile phones for transmission to the telephone
8 of the other party during the phone call.

1 3. The system of claim 2 wherein:
2 the one of the first and second mobile phones electronically
3 communicates voice communications received from the telephone of the other party
4 during the phone call to the vehicle appliance when the one of the first and second
5 mobile phones is electronically connected to the vehicle appliance, wherein the
6 vehicle appliance is connected to a vehicle speaker for outputting the received voice
7 communications of the other party for the user to hear during the phone call.

1 4. The system of claim 1 wherein:
2 the vehicle appliance includes a keypad, the keypad being integrated
3 into the vehicle for access by the user, wherein the vehicle appliance controls one
4 of the first and second mobile phones in accordance with dialing activity of the
5 keypad when the one of the first and second mobile phones is electronically
6 connected to the vehicle appliance.

1 5. The system of claim 1 wherein:
2 the vehicle appliance includes a display, the display being integrated
3 into the vehicle for access by the user, wherein the vehicle appliance controls the
4 display to display information indicative of activity of one of the first and second
5 mobile phones when the one of the first and second mobile phones is electronically
6 connected to the vehicle appliance.

1 6. The system of claim 1 wherein:
2 the vehicle appliance is electronically connected to a vehicle power
3 supply in order to power one of the first and second mobile phones when the one of
4 the first and second mobile phones is electronically connected to the vehicle
5 appliance.

1 7. The system of claim 2 wherein:

2 the vehicle appliance includes a voice recognition converter, wherein
3 the voice recognition converter recognizes user voice commands received by the
4 microphone and the vehicle appliance electronically communicates with the one of
5 the first and second mobile phones in order to control the one of the first and second
6 mobile phones in accordance with the user voice commands when the one of the first
7 and second mobile phones is electronically connected to the vehicle appliance.

1 8. The system of claim 3 wherein:
2 the one of the first and second mobile phones electronically
3 communicates textual messages received from the telephone of the other party
4 during the phone call to the vehicle appliance when the one of the first and second
5 mobile phones is electronically connected to the vehicle appliance, wherein the
6 vehicle appliance includes a text-to-speech (TTS) converter which converts the
7 received textual messages into speech, wherein the vehicle appliance outputs the
8 speech on the speaker for the user to hear during the phone call.

1 9. The system of claim 1 wherein:
2 the adapter sleeve receiving area of the adapter base has a universal
3 electrical plug connector, and the first and second adapter sleeves each have a
4 complementary universal electrical plug connector;
5 wherein the plug connector of the adapter base and the
6 complementary plug connector of the first adapter sleeve interconnect with one
7 another in order to electronically connect the first adapter sleeve to the vehicle
8 appliance when the adapter base receives the first adapter sleeve;
9 wherein the plug connector of the adapter base and the
10 complementary plug connector of the second adapter sleeve interconnect with one
11 another in order to electronically connect the second adapter sleeve to the vehicle
12 appliance when the adapter base receives the second adapter sleeve.

1 10. The system of claim 9 wherein:
2 the first adapter sleeve has a first electrical plug connector which
3 connects with a complementary electrical plug connector of the first mobile phone
4 when the first adapter sleeve receives the first mobile phone in order to

5 electronically connect the first mobile phone to the first adapter sleeve and thereby
6 electronically connect the first mobile phone to the vehicle appliance when the
7 adapter base receives the first adapter sleeve.

1 11. The system of claim 10 wherein:
2 the second adapter sleeve has a second electrical plug connector
3 different than the first electrical plug connector of the first adapter sleeve, the
4 second electrical plug connector connects with a complementary electrical plug
5 connector of the second mobile phone when the second adapter sleeve receives the
6 second mobile phone in order to electronically connect the second mobile phone to
7 the second adapter sleeve and thereby electronically connect the second mobile
8 phone to the vehicle appliance when the adapter base receives the second adapter
9 sleeve.

1 12. A universal mobile phone adapter device for a vehicular
2 hands-free mobile phone system, the system having a vehicle appliance integrated
3 into a vehicle, the vehicle appliance being operable for enabling a user to talk hands-
4 free on a mobile phone during a phone call between the mobile phone and a
5 telephone of another party when the mobile phone is electronically connected to the
6 vehicle appliance, the device comprising:

7 a universal vehicle adapter base integrated in the interior of the
8 vehicle for access by the user, the adapter base being electronically connected to the
9 vehicle appliance and having an adapter sleeve receiving area sized to receive at a
10 time one adapter sleeve having a uniform base configuration;

11 a first adapter sleeve having the uniform base configuration in order
12 to be removably receivable within the adapter sleeve receiving area of the adapter
13 base, the first adapter sleeve having a first mobile phone receiving area for
14 removably receiving a first mobile phone having a first physical body configuration
15 and a first electrical interface configuration;

16 wherein the first adapter sleeve and the adapter base electronically
17 connect the first mobile phone to the vehicle appliance when the first adapter sleeve
18 receives the first mobile phone and the adapter base receives the first adapter sleeve;

19 a second adapter sleeve having the uniform base configuration in
20 order to be removably receivable within the adapter sleeve receiving area of the
21 adapter base, the second adapter sleeve having a second mobile phone receiving area
22 different than the first mobile phone receiving area for removably receiving a second
23 mobile phone having a second physical body configuration and a second electrical
24 interface configuration different than the first physical body configuration and the
25 first electrical interface configuration;

26 wherein the second adapter sleeve and the adapter base electronically
27 connect the second mobile phone to the vehicle appliance when the second adapter
28 sleeve receives the second mobile phone and the adapter base receives the second
29 adapter sleeve.

1 13. The device of claim 12 wherein the vehicle appliance includes
2 a microphone for receiving voice communications of the user during a phone call
3 between one of the first and second mobile phones and a telephone of another party
4 when the one of the first and second mobile phones is electronically connected to the
5 vehicle appliance, wherein:

6 the one of the first and second mobile phones electronically receives
7 the voice communications from the vehicle appliance for transmission to the
8 telephone of the other party during the phone call when the one of the first and
9 second mobile phones is electronically connected to the vehicle appliance.

1 14. The device of claim 13 wherein the vehicle appliance is
2 connected to a vehicle speaker for outputting voice communications of the other
3 party for the user to hear during the phone call, wherein:

4 the one of the first and second mobile phones electronically transmits
5 voice communications of the other party received from the telephone of the other
6 party during the phone call to the vehicle appliance when the one of the first and
7 second mobile phones is electronically connected to the vehicle appliance for the
8 vehicle appliance to output over the vehicle speaker.

1 15. The device of claim 12 wherein the vehicle appliance includes
2 a keypad integrated into the vehicle for access by the user, wherein:

3 the one of the first and second mobile phones electronically receives
4 commands indicative of dialing activity on the keypad from the vehicle appliance
5 and functions in accordance with the received commands when the one of the first
6 and second mobile phones is electronically connected to the vehicle appliance.

1 16. The device of claim 12 wherein the vehicle appliance includes
2 a display integrated into the vehicle for access by the user, wherein:

3 the one of the first and second mobile phones electronically transmits
4 display information indicative of mobile phone activity to the vehicle appliance for
5 the vehicle appliance to display on the display when the one of the first and second
6 mobile phones is electronically connected to the vehicle appliance.

1 17. The device of claim 12 wherein:

2 the adapter sleeve receiving area of the adapter base has a universal
3 electrical plug connector, and the first and second adapter sleeves each have a
4 complementary universal electrical plug connector;

5 wherein the plug connector of the adapter base and the
6 complementary plug connector of the first adapter sleeve interconnect with one
7 another in order to electronically connect the first adapter sleeve to the vehicle
8 appliance when the adapter base receives the first adapter sleeve;

9 wherein the plug connector of the adapter base and the
10 complementary plug connector of the second adapter sleeve interconnect with one
11 another in order to electronically connect the second adapter sleeve to the vehicle
12 appliance when the adapter base receives the second adapter sleeve.

1 18. The device of claim 17 wherein:

2 the first adapter sleeve has a first electrical plug connector which
3 connects with a complementary electrical plug connector of the first mobile phone
4 when the first adapter sleeve receives the first mobile phone in order to
5 electronically connect the first mobile phone to the first adapter sleeve and thereby
6 electronically connect the first mobile phone to the vehicle appliance when the
7 adapter base receives the first adapter sleeve;

8 wherein the second adapter sleeve has a second electrical plug
9 connector different than the first electrical plug connector of the first adapter sleeve,
10 the second electrical plug connector connects with a complementary electrical plug
11 connector of the second mobile phone when the second adapter sleeve receives the
12 second mobile phone in order to electronically connect the second mobile phone to
13 the second adapter sleeve and thereby electronically connect the second mobile
14 phone to the vehicle appliance when the adapter base receives the second adapter
15 sleeve.

1 19. A method for using a vehicle appliance operable for enabling
2 a user to talk hands-free on a mobile phone during a phone call between the mobile
3 phone and a telephone of another party when the mobile phone is electronically
4 connected to the vehicle appliance, the vehicle appliance having a universal mobile
5 phone adapter base in the interior of the vehicle for access by a user, the adapter
6 base having an adapter sleeve receiving area for receiving an adapter sleeve at a
7 time, the method comprising:

8 inserting a first adapter sleeve having a first mobile phone receiving
9 area into the adapter sleeve receiving area of the adapter base in order to
10 electronically connect the first adapter sleeve to the vehicle appliance;

11 inserting a first mobile phone having a first configuration into the
12 first mobile phone receiving area of the first adapter sleeve in order to electronically
13 connect the first mobile phone to the first adapter sleeve such that the first mobile
14 phone is electronically connected to the vehicle appliance when the first mobile
15 phone is inserted into the first adapter sleeve and the first adapter sleeve is inserted
16 into the adapter base;

17 removing the first adapter sleeve from the adapter base;

18 inserting a second adapter sleeve having a second mobile phone
19 receiving area different than the first mobile phone receiving area into the adapter
20 base in order to electronically connect the second adapter sleeve to the vehicle
21 appliance;

22 inserting a second mobile phone having a second configuration
23 different than the first configuration into the second mobile phone receiving area of
24 the second adapter sleeve in order to electronically connect the second mobile phone

25 to the second adapter sleeve such that the second mobile phone is electronically
26 connected to the vehicle appliance when the second mobile phone is inserted into the
27 second adapter sleeve and the second adapter sleeve is inserted into the adapter base.

1 20. The method of claim 19 further comprising:
2 removing the first mobile phone from the first adapter sleeve after the
3 first mobile phone has been inserted into the first adapter sleeve.